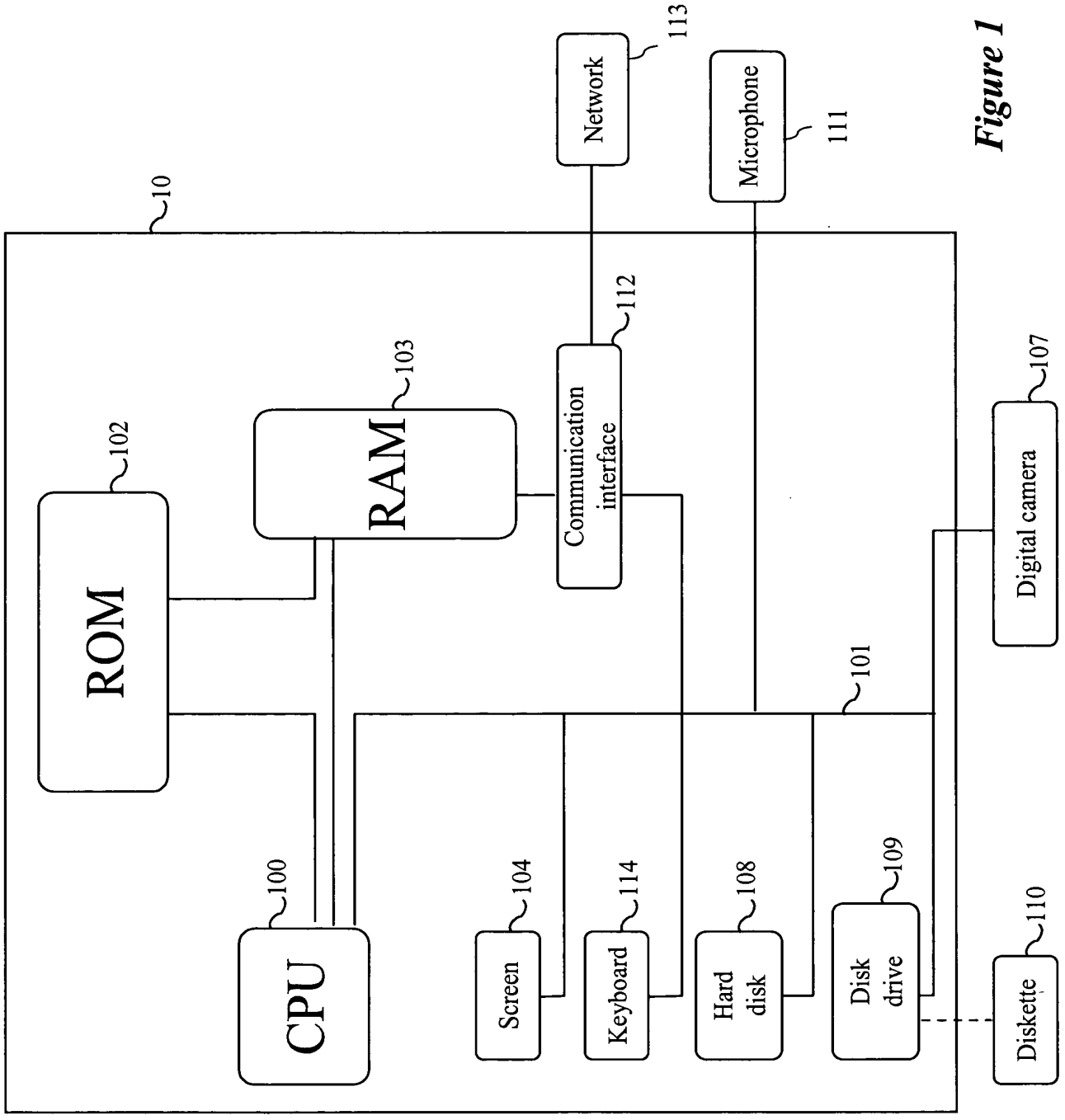
10
ROM
102
RAM
103
CPU
100
Communication interface
112
Network
113
Microphone
111
Digital camera
107
101
Screen
104
Keyboard
114
Hard disk
108
Disk drive
109
Diskette
110

Figure 1

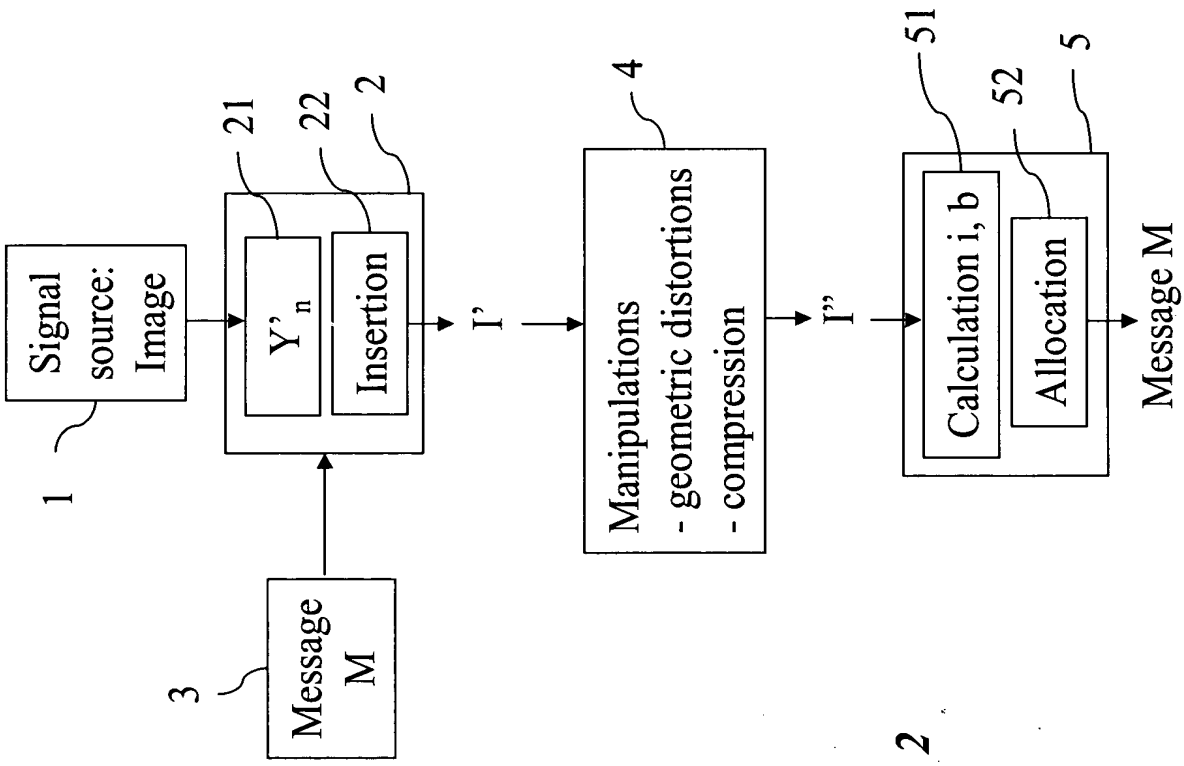
Signal source: Image
1
Message M
3
21
22
2
Y'_n
Insertion
I'
4
Manipulations
- geometric distortions
- compression
I''
51
52
5
Calculation i, b
Allocation
Message M

Figure 2

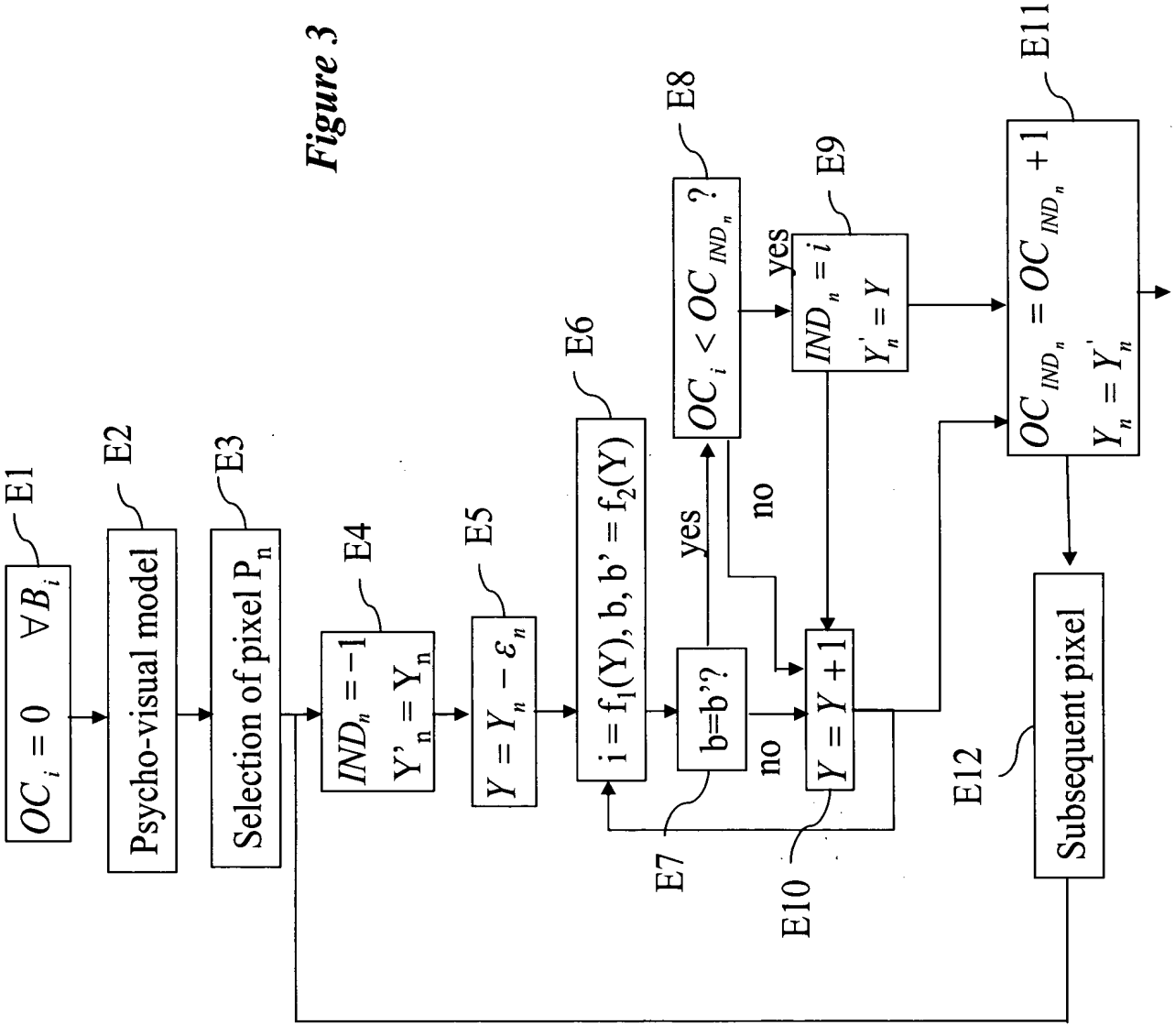
$OC_i = 0 \quad \forall B_i$
E1
Psycho-visual model
E2
Selection of pixel P_n
E3
$IND_n = -1$
$Y'_n = Y_n$
E4
$Y = Y_n - \varepsilon_n$
E5
$i = f_1(Y)$, b, b' = $f_2(Y)$
E6
b=b'?
E7
yes
no
$OC_i < OC_{IND_n}$?
E8
yes
no
$IND_n = i$
$Y'_n = Y$
E9
$Y = Y + 1$
E10
$OC_{IND_n} = OC_{IND_n} + 1$
$Y_n = Y'_n$
E11
Subsequent pixel
E12

Figure 3

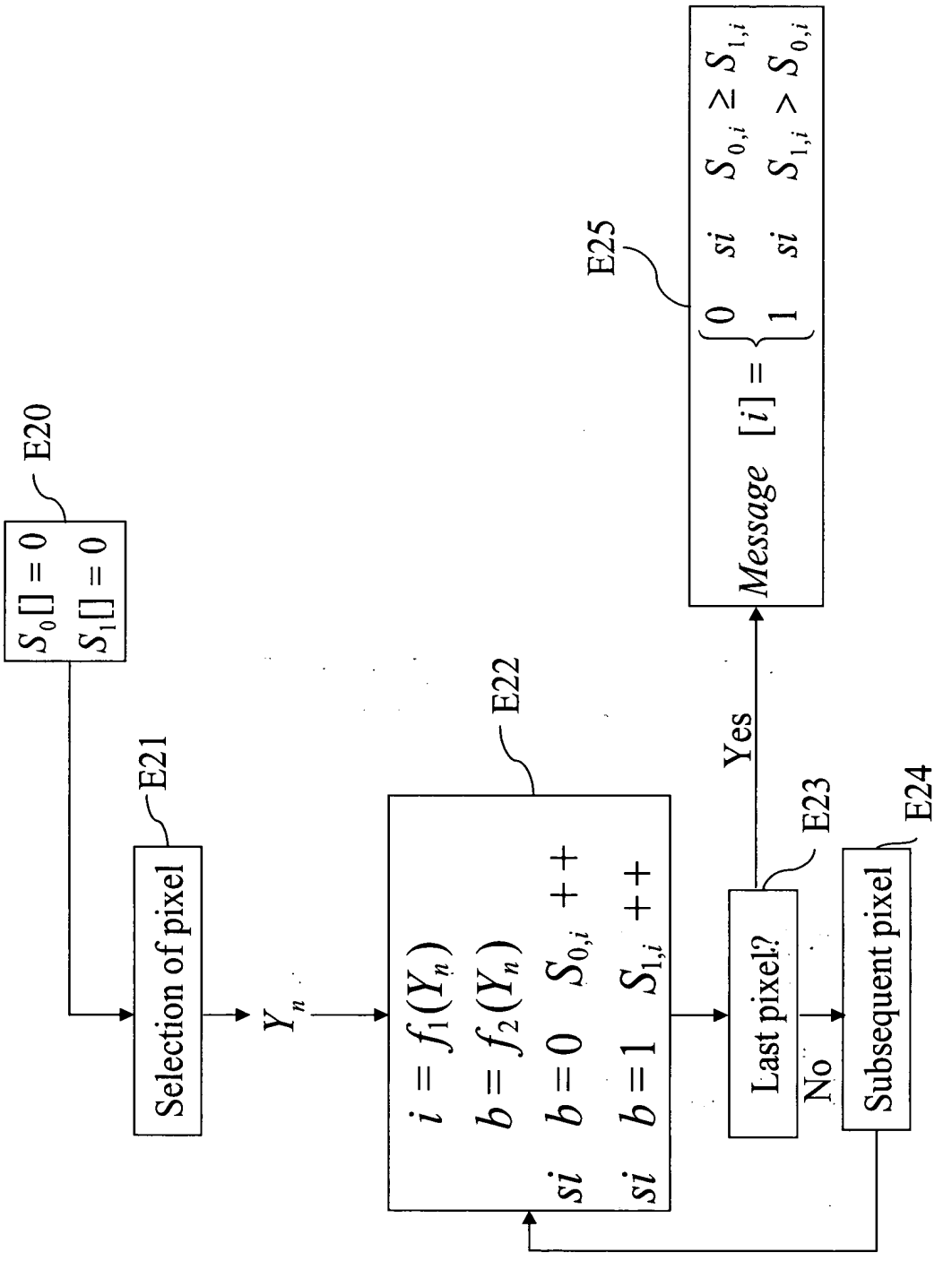
E20
$S_0[] = 0$
$S_1[] = 0$
E21
Selection of pixel
Y_n
E22
$i = f_1(Y_n)$
$b = f_2(Y_n)$
si $b = 0$ $S_{0,i}$ ++
si $b = 1$ $S_{1,i}$ ++
E23
Last pixel?
No
Yes
E24
Subsequent pixel
E25
$Message\ [i] = \begin{cases} 0 & si\ S_{0,i} \geq S_{1,i} \\ 1 & si\ S_{1,i} > S_{0,i} \end{cases}$

Figure 4

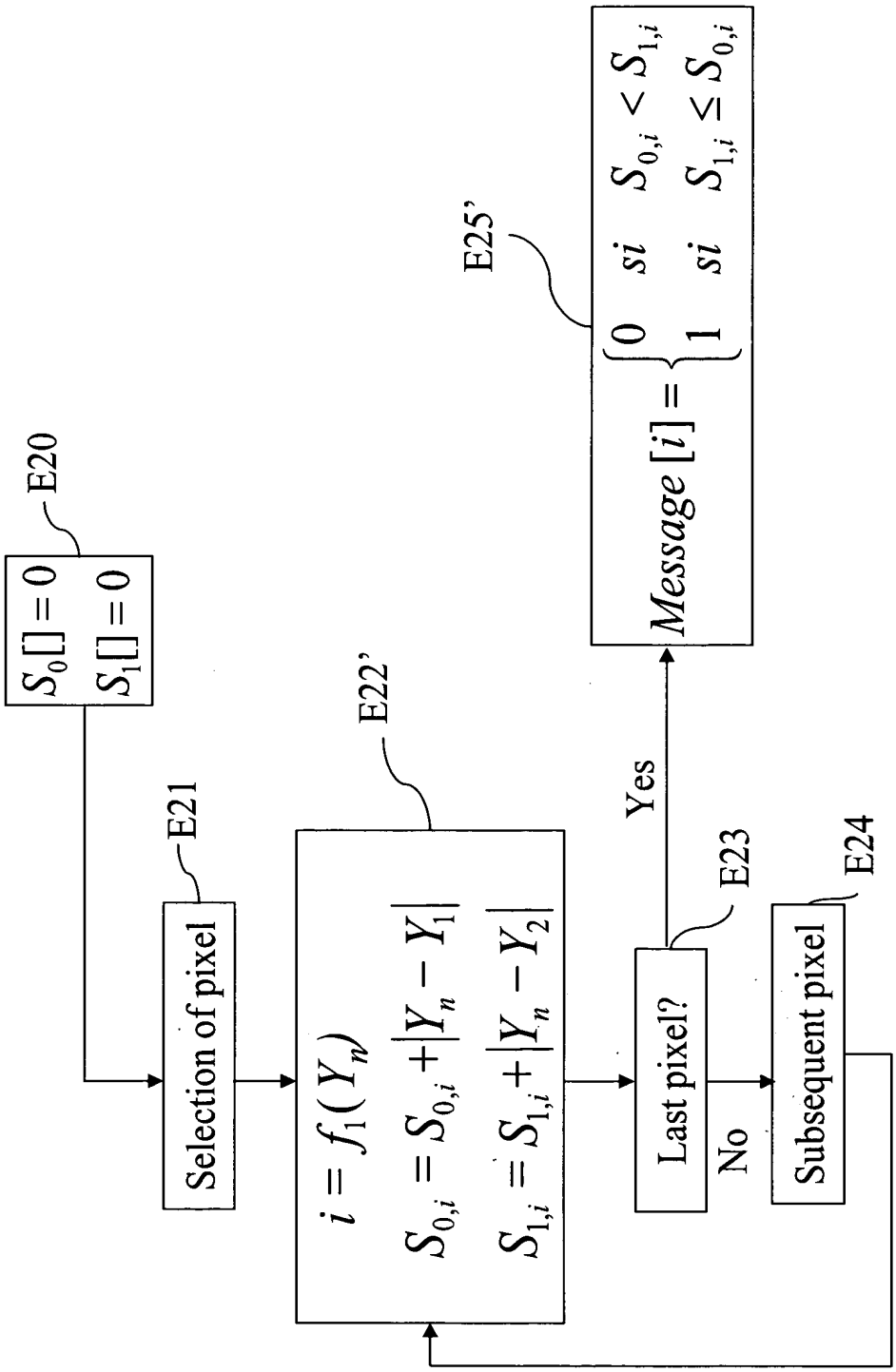
E20
$S_0[] = 0$
$S_1[] = 0$
E21
Selection of pixel
E22'
$i = f_1(Y_n)$
$S_{0,i} = S_{0,i} + |Y_n - Y_1|$
$S_{1,i} = S_{1,i} + |Y_n - Y_2|$
E23
Last pixel?
Yes
No
E24
Subsequent pixel
E25'
$Message[i] = \begin{cases} 0 & si \quad S_{0,i} < S_{1,i} \\ 1 & si \quad S_{1,i} \leq S_{0,i} \end{cases}$

Figure 5

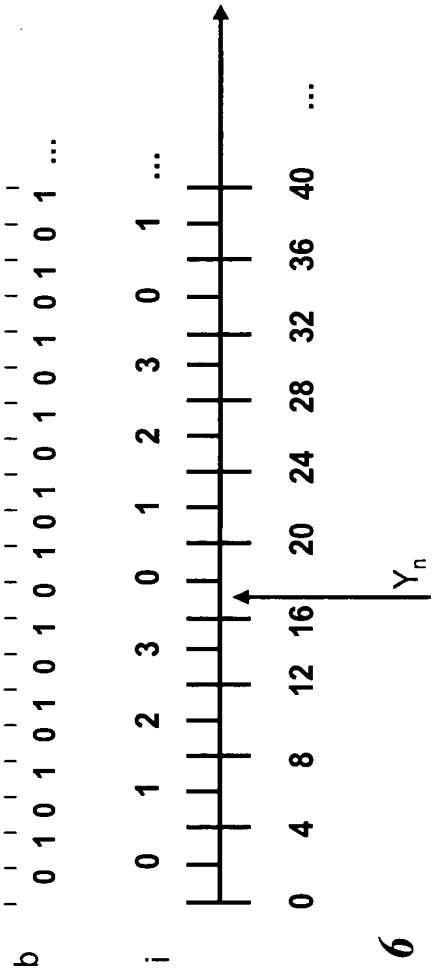

Figure 6

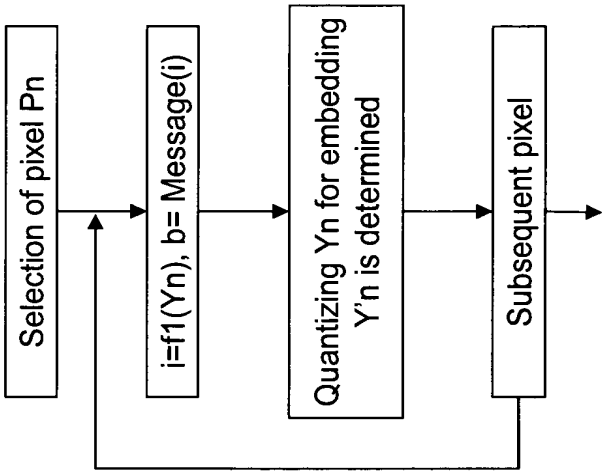

Figure 7